

REMARKS

Entry of this Amendment and reconsideration are respectfully requested in view of the amendments made to the claims and for the remarks made herein.

Claims 1-13 are pending and stand rejected.

Claims 1 and 12 are independent claims.

Claims 1 and 12 have been amended. Claim 13 has been cancelled without prejudice.

Applicant thanks the Examiner for his time to discuss the invention claimed and the references cited.

Claims 1, 3-4, 7-8 and 12-13 stand rejected under 35 USC 102(b) as being anticipated by Friend (USP 6,429,601, hereinafter D1). Claims 2, 5-6 and 9-11 stand rejected under 35 USC 103(a) as being unpatentable over D1 in view of Yamazaki (USP 6,326,941, hereinafter D2).

Regarding the rejection of claims 1, 3-4, 7-8 and 12-13 as being anticipated by D1, the Office Action that D1 discloses an active matrix display device, a data input for receiving a data signal (fig. 6, control unit 24), a controller of distributing the data signal over the display pixels to generate an image with an overall rightness level during at least one frame period (fig. 6, processing means 28 and switch 310, wherein said device is adapted to divide said frame period for at least one subset of display pixels (fig. 7, 8) second cycle of fig. 8, divided into two sub-periods) such that said display pixels of said at least one subset have at least a light output at a first non-zero brightness level during a first sub-period of said frame period (fig. 8, first pulse of second cycle) and at a second non-zero brightness level during a second sub-period of said frame (fig. 8, second pulse of second cycle), wherein the first and second levels of brightness are selected so as the time averaged sum of said brightness levels of said pixels within said at least one subset is substantially equal to said overall brightness level of said

image (figs. 7 and 8, on-time of the pixel is applied as a series of pulses to give total on-time per cycle needed to achieve the required duty cycle), said second level being maintained at a stable level during the second sub period and the first and second levels being in a known ratio (fig. 8, col. 7, lines 1-56).

In the telephonic interview, the Examiner further referred to the second cycle (which includes two subpulses) of D1 for teaching two subperiods and that these subpulses are considered comparable to the two subperiods recited in the claims.

In view of the interpretation of the two subpulses of the Friend reference, independent claims 1 and 12 have been amended to recite that there are two subperiods within a frame, wherein the second subperiod is adjacent to the first period and that the brightness level in each subperiod is maintained for the duration of the subject period.

No new matter has been added. Support for the amendment may be found at least in Figure 2 and in claim 13.

D1 teaches a time division method for providing a brightness level to a subset of pixels by controlling the time period in which voltage is applied to the pixel drive circuits. With reference to Figures 7 and 8, which are referred to in the Office Action, D1 teaches a system for achieving a gray-scale brightness by allowing for different times that a constant voltage level is applied to the pixel to achieve a desired brightness level. (see for example, col. 7, lines 19-25; “[a] number of detailed drive schemes could be used to achieve the desired brightness of each pixel. For instance the pixel could ... be turned on once and off once in each cycle with the time between the on and off switching chosen to achieve the required duty cycle (see Fig. 7) or more than once (see Fig. 8).”

See also, col. 7, lines 29-36, “[t]he on-time of the pixel is applied as a series of pulses of equal length ... which when added together give the total on-time per cycle needed to achieve the required duty cycle. With the total on-time per cycle kept the same the pattern of current between the on time and the off time can be varied to suit other requirement...”

Thus, with regard to Figure 7, D1 teaches that a voltage may be applied continuously within a frame to achieve a desired on/off ratio and with regard to Figure 8, D1 teaches that a voltage may be applied as a series of pulses, wherein a single on/off voltage pulse may be applied during the cycle to achieve a brightness level of 10 percent. In addition, with regard to Figure 8, the number of on/off pulses within a cycle may be altered to achieve different levels of brightness (see for example, col. 7, lines 25-29; "Fig. 8 shows a plot of applied current against time for a single pixel. The lines 36 separate cycles of the drive scheme. During the three cycles shown in Figure 8, the brightness of the pixel is increased from around 10% to around 40%.")

Accordingly, D1 illustrates that in a first cycle with only one pulse, a 10% brightness may be achieved and in separate cycles, using 2 pulses or 4 pulses that are substantially similar to the single pulse, then brightness levels of 20 percent and 40 percent, respectively, may be achieved.

Hence, D1 discloses that for a desired brightness to be achieved during a cycle (i.e., frame period F), a number of voltage (current) pulses may be applied to achieve the desired brightness. Thus, with regard to a 10 percent overall brightness level, then a single pulse is provided. And with a 20 percent overall brightness level, then two pulses is provided.

For example, for 20 percent overall brightness level, D1 discloses that in the frame (or cycle) there is a ***first period of non-zero voltage and a second period of non-zero voltage*** and at least one period of zero voltage in-between. Similarly for a 40 percent overall brightness level, D1 discloses periods of non-zero voltage and periods of zero voltage.

However, D1 fails to disclose that the frame is divided into ***a first subperiod and an adjacent second subperiod*** and that the brightness level is maintained for the duration of each subperiod.

Rather, D1 discloses that the overall brightness level (e.g., 20 percent) is achieved with a first non-zero voltage period and a second non-zero voltage period and a zero voltage period in-between.

Thus, D1 fails to disclose at least one element recited in the claims (i.e., first and second periods of non-zero voltage).

In addition, with regard to the subject matter of claim 13, “the first and second subperiods being adjacent in time” the Office Action refers to Figures 7 and 8 and col.7, lines 19-56. However, Figure 7 illustrates single periods of voltage and non-voltage and Figure 8 illustrates a plurality of periods of voltage and non-voltage. However, neither Figure 7 nor Figure 8 teaches a first subperiod and an adjacent second period, each having a non-zero voltage level for the duration of the subperiod.

A claim is anticipated if and only if each and every element of the claim is recited in a single prior art reference.

In this case, D1 cannot anticipate the subject matter recited in the independent claims, as D1 fails to disclose the element of “divide said frame period (F) into a **first subperiod and an adjacent second subperiod**... such that said display pixels (3) of said at least one subset (S) **have at least a light output (L) at a first non-zero brightness level (L1) for a duration of the first sub-period (F1)** of said frame period (F) and **at a second non-zero brightness level (L2) for a duration of a second sub-period (F2) of said frame period (F)**, wherein the first and second levels of brightness-are selected so that **the time averaged sum of said brightness levels (L1,L2) of said pixels within said at least one subset (S) is substantially equal to said overall brightness level** of said image in said at least one subset (S), said second level being maintained a stable level during the second sub period and the first and second levels being in a known ratio.”

For the remarks submitted herein, applicant submits that the reason for the rejection of the independent claims has been overcome, as the independent claims recite subject matter that is patently distinguishable over that taught by the cited reference.

With regard to the rejection of the remaining claims, each of these claims depends from one of the independent claims and, hence, is also not anticipated by the cited reference by virtue of their dependency upon an allowable base claims.

With regard to the reject of the remaining claims rejected under 35 USC 103, applicant submits that these claims depend from corresponding ones of the independent claims, and, hence, inherent the subject matter recited that has been shown not to be disclosed by the cited reference, D1. D2 fails to provide any teaching to correct the deficiency found to exist in D1.

Accordingly, the remaining claims are also not rendered obvious by the combination of the cited references, as the combination of the cited references fails to disclose all the elements claimed.

For the remarks made herein, Applicant submits that all the claims are in allowable form and respectfully requests that the rejections of the claims be withdrawn and a Notice of Allowance be issued.

Applicant denies any statement, position or averment stated in the Office Action that is not specifically addressed by the foregoing. Any rejection and/or points of argument not addressed are moot in view of the presented arguments and no arguments are waived and none of the statements and/or assertions made in the Office Action is conceded.

Applicant makes no statement regarding the patentability of the subject matter recited in the claims prior to this Amendment and has amended the claims solely to facilitate expeditious prosecution of this patent application. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by the originally filed claims, as presented prior to this Amendment, and any additional claims in one or more continuing applications during the pendency of the instant application.

In order to advance the prosecution of the matter, applicant respectively requests that any errors in form that do not alter the substantive nature of the arguments presented herein be transmitted telephonically to the applicant's representative so that such errors may be quickly resolved or pursuant to MPEP 714.03 be entered into the record to avoid continued delay of the prosecution of this matter any further.

MPEP 714.03 affords the Examiner the discretion, pursuant to 37 CFR 1.135 (c), to enter into the record a bona fide attempt to advance the application that includes minor errors in form.

"[a]n Examiner may treat an amendment not fully responsive to a non-final Office Action by: (A) accepting the amendment as an adequate reply to the non-final Office action to avoid abandonment ... (B) notifying the applicant that the reply must be completed... (C) setting a new time period for applicant to complete the reply ...

The treatment to be given to the amendment depends upon:

(A) whether the amendment is bona fide; (B) whether there is sufficient time for applicant's reply ... (C) the nature of the deficiency.

Where an amendment substantially responds to the rejections, objections or requirements in a non-final Office action (and is bona fide attempt to advance the application to final action) but contains a minor deficiency (e.g., fails to treat every rejection, objection or requirement), the examiner may simply act on the amendment and issue a new (non-final or final) Office action. The new Office action may simply reiterate the rejection, objection or requirement not addressed by the amendment (or otherwise indicate that such rejection, objection or requirement is no longer applicable).

This course of action would not be appropriate in instances in which an amendment contains a serious deficiency (e.g., the amendment is unsigned or does not appear to have been filed in reply to the non-final Office action)..."

However, if the Examiner believes that such minor errors in form cannot be entered into the record or that the disposition of any issues arising from this response may be best resolved by a telephone call, then the Examiner is invited to contact applicant's representative at the telephone number listed below to resolve such minor errors or issues.

Respectfully submitted,
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Date: June 25, 2011

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